WEST Search History

Hide Items | Restore | Clear | Cancel

DATE: Thursday, July 06, 2006

Hide?	Set Name	Query	Hit Count
	DB=PGPB,USPT,DWPI; PLUR=NO; OP=ADJ		
☐	L19	(l13 same antisense) and (@pd<20020210)	27
☐	L18	l17 and (@pd<20020210)	3
☐	L17	L14 and ((pei or polyethyleneimine) with (encapsul$ or cation$ or lipos$))	52
☐	L16	L14 and ((pei or polyethyleneimine) with encapsul$ or cation$ or lipos$)	3316
☐	L15	L14 and (pei or polyethyleneimine)	236
☐	L14	L13 and antisense	3555
☐	L13	((HA or NA or PB2 or PB1 or PA or NP or M1 or M2 or NS) with influenz$)	5657
☐	L12	((PB2 or PB1 or PA or NP or M1 or M2 or NS) with influenz$)	1333
☐	L11	l10 and (pei near5 (cation$ or lipos$))	4
☐	L10	L9 and (@pd<20020210)	48
☐	L9	L8 and influenza	396
☐	L8	antisense and pei	1750
☐	L7	l6 and (pei or polyethyleneimine)	11
☐	L6	l5 and (cation$ or lipid or (transfect near2 enhanc$ or lipos$))	51
☐	L5	L4 and (sirna or shrna)	58
☐	L4	L3 and (influenz$)	415
☐	L3	L2 and (influenz$ or flu$)	1094
☐	L2	L1 and (@pd<20030210 or @ad<20030210)	1170
☐	L1	(PTN or NP or influenz$ or flu$) and (sirna or rnai or dsrna or shrna)	3855

END OF SEARCH HISTORY

Connecting via Winsock to STN

Welcome to STN International! Enter x:x

LOGINID:ssspta1635jxs

PASSWORD:
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* * * * * * * * * * Welcome to STN International * * * * * * * * * *

NEWS	1		Web Page URLs for STN Seminar Schedule - N. America
NEWS	2		"Ask CAS" for self-help around the clock
NEWS	3	FEB 27	New STN AnaVist pricing effective March 1, 2006
NEWS	4	APR 04	STN AnaVist $500 visualization usage credit offered
NEWS	5	MAY 10	CA/CAplus enhanced with 1900-1906 U.S. patent records
NEWS	6	MAY 11	KOREAPAT updates resume
NEWS	7	MAY 19	Derwent World Patents Index to be reloaded and enhanced
NEWS	8	MAY 30	IPC 8 Rolled-up Core codes added to CA/CAplus and USPATFULL/USPAT2
NEWS	9	MAY 30	The F-Term thesaurus is now available in CA/CAplus
NEWS	10	JUN 02	The first reclassification of IPC codes now complete in INPADOC
NEWS	11	JUN 26	TULSA/TULSA2 reloaded and enhanced with new search and and display fields
NEWS	12	JUN 28	Price changes in full-text patent databases EPFULL and PCTFULL

NEWS EXPRESS JUNE 30 CURRENT WINDOWS VERSION IS V8.01b, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 26 JUNE 2006.

NEWS HOURS	STN Operating Hours Plus Help Desk Availability
NEWS LOGIN	Welcome Banner and News Items
NEWS IPC8	For general information regarding STN implementation of IPC 8
NEWS X25	X.25 communication option no longer available

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* Due to scheduled maintenance of STN on Sunday, July 9, 2006, *
* some databases may not be available until 04:00 (4:00 AM) *
* Eastern Daylight Time. *
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FILE 'HOME' ENTERED AT 13:57:38 ON 06 JUL 2006

=> FIL MEDLINE BIOSIS CA EMBASE SCISEARCH

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

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FILE 'MEDLINE' ENTERED AT 13:57:46 ON 06 JUL 2006

FILE 'BIOSIS' ENTERED AT 13:57:46 ON 06 JUL 2006
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FILE 'CA' ENTERED AT 13:57:46 ON 06 JUL 2006
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FILE 'SCISEARCH' ENTERED AT 13:57:46 ON 06 JUL 2006
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=> s influenz?
L1       226894 INFLUENZ?

=> s sirna or shrna
L2        21064 SIRNA OR SHRNA

=> s l2 and l2
L3        21064 L2 AND L2

=> s l1 and l2
L4          121 L1 AND L2

=> dup rem l4
PROCESSING COMPLETED FOR L4
L5           62 DUP REM L4 (59 DUPLICATES REMOVED)

=> s l5 and py<=py2003
DATE SPECIFICATION IS NOT VALID
Date specifications may use ranges and numeric operators.  The date
itself can be in any of the following general formats:

  STN Format:     YYYYMMDD

  Slash Format:   MM/DD/YYYY or MM/YYYY

  Dot Format:     DD.MM.YYYY or MM.YYYY

  Text Format:    February 10, 1987       Feb 1989
                  Feb. 10, 1987           1990
                  Feb. 10, 2000           1998 - 2001
                  Feb 10, 1987            July 1997 - May 2002
                  10 February 1987        March 5 - 8, 1990
                  10 Feb 2007             April - June, 1999

  Any year entered with only two digits will be interpreted as being
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  19010312.

=> s l5 and py<=2003
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=> s l6 and (l1 (p) l2)
L7            6 L6 AND (L1 (P) L2)

=> s l5 and py<=2002
   1 FILES SEARCHED...
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L8            5 L5 AND PY<=2002

=> s CHEN, J?/au; EISEN, H?/au; GE, Q?/au
L9        98287 CHEN, J?/AU


EISEN, IS NOT A RECOGNIZED COMMAND
COMMAND STACK INTERRUPTED.  ENTER "DISPLAY HISTORY"
TO SEE WHICH COMMANDS WERE EXECUTED.

The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s EISEN, H?/au;s GE, Q?/au
L10        2367 EISEN, H?/AU


L11        1110 GE, Q?/AU

=> s l9 or l10 or l11
L12      101544 L9 OR L10 OR L11

=> s l12 and (l1 or l2)
   3 FILES SEARCHED...
L13         397 L12 AND (L1 OR L2)

=> dup rem l13
PROCESSING COMPLETED FOR L13
L14         157 DUP REM L13 (240 DUPLICATES REMOVED)

=> s l14 and py<=2003
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=> s l15 and l1
L16          63 L15 AND L1

=> d his

     (FILE 'HOME' ENTERED AT 13:57:38 ON 06 JUL 2006)

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     JUL 2006
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L2         21064 S SIRNA OR SHRNA
L3         21064 S L2 AND L2
L4           121 S L1 AND L2
L5            62 DUP REM L4 (59 DUPLICATES REMOVED)
L6            13 S L5 AND PY<=2003
L7             6 S L6 AND (L1 (P) L2)
L8             5 S L5 AND PY<=2002
L9         98287 S CHEN, J?/AU
L10         2367 S EISEN, H?/AU
L11         1110 S GE, Q?/AU
L12       101544 S L9 OR L10 OR L11
L13          397 S L12 AND (L1 OR L2)
L14          157 DUP REM L13 (240 DUPLICATES REMOVED)
L15           74 S L14 AND PY<=2003
L16           63 S L15 AND L1

=> s l16 and l2
L17           1 L16 AND L2
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=> s l17 or l6
L18          13 L17 OR L6

=> dup rem l18
PROCESSING COMPLETED FOR L18
L19          13 DUP REM L18 (0 DUPLICATES REMOVED)

=> d l19 bib abs 1-13

L19  ANSWER 1 OF 13  CA  COPYRIGHT 2006 ACS on STN
AN   144:127482  CA
TI   Inhibition of class II antigen invariant chain (Ii) expression in
     mammalian cells using small interfering RNAs (siRNAs)
IN   Xu, Minzhen; Humphreys, Robert
PA   USA
SO   U.S. Pat. Appl. Publ., 47 pp., Cont.-in-part of U.S. Ser. No. 127,347.
     CODEN: USXXCO
DT   Patent
LA   English
FAN.CNT 5
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PI	US 2006008448	A1	20060112	US 2004-999208	20041129
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	US 6368855	B1	20020409	US 1998-205995	19981204 <--
	US 2003054365	A1	20030320	US 2002-54387	20020122 <--
	US 2003198626	A1	20031023	US 2002-127347	20020422 <--
PRAI	US 1996-661627	A1	19960611		
	US 1998-36746	B2	19980309		
	US 1998-205995	A3	19981204		
	US 2002-54387	B2	20020122		
	US 2002-127347	A2	20020422		

AB The present invention is directed toward compns. and methods involving the inhibition of Ii antigen (MHC Class II antigen invariant chain) expression in cells for the purpose of altering antigen presentation pathways. More specifically, disclosed are compns. and methods which relate to MHC Class II mol. presentation of antigenic epitopes which, under normal circumstances, would not be presented in association with MHC Class II mols. The invention relates to presentation in cells which normally express MHC Class II mols., as well as cells which can be induced to express MHC Class II mols. Adenoviral vectors are also constructed containing the transcription factor CIITA and/or interferon-γ cDNAs for tumor protection by MHC Class II+/Ii-. By suppressing the expression of the Ii protein, this vast repertoire of peptides which have been transported into the endoplasmic reticulum to MHC Class I and subsequent presentation to CD8+ T lymphocytes, can bind to MHC Class II mols. for subsequent presentation to, and activation of, CD4+ T immunoregulatory cells. Embodiments relating to RNA interference of Ii are specifically disclosed. Sequences of Ii-specific **siRNAs** are presented.

```
L19  ANSWER 2 OF 13  CA  COPYRIGHT 2006 ACS on STN
AN   142:183225  CA
TI   RNA interference-mediated inhibition of gene expression using chemically
     modified short interfering nucleic acids
IN   McSwiggen, James; Chowrira, Bharat; Beigelman, Leonid; Macejak, Dennis;
     Zinnen, Shawn; Pavco, Pamela; Haeberli, Peter; Morissey, David; Fosnaugh,
     Kathy; Jamison, Sharon; Usman, Nassim; Thompson, James; Vargeese, Chandra;
     Wang, Weimen; Chen, Tonqian; Vaish, Narendra
PA   Sirna Therapeutics, Inc., USA
SO   U.S. Pat. Appl. Publ., 204 pp., Cont.-in-part of U.S. Ser. No. 720,448.
     CODEN: USXXCO
DT   Patent
LA   English
FAN.CNT 235
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	AU 9939188	A1	19990916	AU 1999-39188	19990713	<--
	AU 769175	B2	20040115	AU 2000-56616	20000911	
	US 2005096284	A1	20050505	US 2004-783128	20040220	
	US 2005014172	A1	20050120	US 2004-798090	20040311	
	US 2005048529	A1	20050303	US 2004-800487	20040315	
	WO 2004092383	A2	20041028	WO 2004-US11320	20040413	
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US	2005277133	A1	20051215	US 2005-63415	20050222
US	2005282188	A1	20051222	US 2005-98303	20050404
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US	2001-827395	B2	20010405		
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US	2001-334461P	P	20011130		
US	2002-358580P	P	20020220		
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US 2002-401104P	P	20020805
US 2002-404039P	P	20020815
US 2002-225023	A2	20020821
US 2002-406784P	P	20020829
US 2002-408378P	P	20020905
US 2002-409293P	P	20020909
US 2002-409493P	P	20020909
US 2002-238700	A2	20020910
US 2002-409785P	P	20020911
US 2002-411275P	P	20020917
US 2002-411707P	P	20020918
US 2002-251117	A2	20020919
US 2002-412304P	P	20020920
US 2002-413714P	P	20020926
US 2002-418655P	P	20021015
US 2002-277494	B2	20021021
US 2002-287949	A2	20021104
US 2002-425559P	P	20021112
US 2002-427467P	P	20021119
US 2002-306747	A2	20021127
US 2002-429359P	P	20021128
US 2002-431105P	P	20021205
US 2003-439922P	P	20030114
US 2003-440129P	P	20030115
WO 2003-US2510	A2	20030128
WO 2003-US3473	A2	20030205
WO 2003-US3662	A2	20030206
WO 2003-US4034	A2	20030211
WO 2003-US4088	A2	20030211
WO 2003-US4123	A2	20030211
WO 2003-US4347	A2	20030211
WO 2003-US4566	A2	20030211
WO 2003-US7273	A2	20030211
WO 2003-US4250	A2	20030213
WO 2003-US4317	A2	20030213
WO 2003-US4397	A2	20030213
WO 2003-US4402	A2	20030213
WO 2003-US4448	A2	20030213
WO 2003-US4710	A2	20030218
WO 2003-US4738	A2	20030218
WO 2003-US4907	A2	20030218
WO 2003-US4908	A2	20030218
WO 2003-US4909	A2	20030218
WO 2003-US4741	A2	20030220
WO 2003-US4951	A2	20030220
WO 2003-US5022	A2	20030220
WO 2003-US5028	A2	20030220
WO 2003-US5043	A2	20030220
WO 2003-US5044	A2	20030220
WO 2003-US5045	A2	20030220
WO 2003-US5162	A2	20030220
WO 2003-US5190	A	20030220
WO 2003-US5234	A2	20030220
WO 2003-US5326	A2	20030220
WO 2003-US5346	A2	20030220
US 2003-462874P	P	20030415
US 2003-417012	B2	20030416
US 2003-420194	A2	20030422
WO 2003-US12626	A2	20030422
US 2003-422704	B2	20030424
US 2003-424339	A	20030425
US 2003-427160	A2	20030430

US 2003-430882	A2	20030506
US 2003-444853	A2	20030523
US 2003-607933	A	20030627
US 2003-485667P	P	20030709
US 2003-486729P	P	20030711
US 2003-487214P	P	20030714
US 2003-493561P	P	20030808
US 2003-496655P	P	20030820
US 2003-652791	A2	20030829
US 2003-664767	A	20030916
US 2003-665255	A2	20030916
US 2003-667271	A	20030916
US 2003-664668	A2	20030918
US 2003-665951	A2	20030918
US 2003-670011	A2	20030923
US 2003-683990	A2	20031010
US 2003-512701P	P	20031020
US 2003-693059	A2	20031023
US 2003-698311	A	20031031
US 2003-712633	A2	20031113
US 2003-724270	A2	20031126
US 2003-726236	A2	20031202
US 2003-727780	A2	20031203
US 2003-738128	A2	20031218
US 2004-758155	A2	20040112
US 2004-757803	A2	20040114
US 2004-764957	A2	20040126
US 2004-543480P	P	20040210
US 2004-780447	A	20040213
US 2004-783128	A2	20040220
US 2004-798090	A2	20040311
US 2004-800487	A2	20040315
US 2004-824036	A2	20040414
US 2004-825485	A2	20040415
US 2004-826966	A2	20040416
WO 2004-US11848	A2	20040416
US 2004-830569	A2	20040423
US 2004-831620	A2	20040423
WO 2004-US12517	A2	20040423
US 2004-832522	A2	20040426
WO 2004-US13456	A	20040430
US 2004-570086P	P	20040511
US 2004-844076	A	20040511
US 2004-844072	A	20040512
US 2004-16390	A	20040524
WO 2004-US16390	W	20040524
WO 2004-US17630	W	20040603
US 2004-863973	A2	20040609
US 2004-864044	A	20040609
WO 2004-US20516	W	20040625
WO 2004-US21997	W	20040709
US 2004-894475	A2	20040719
US 2004-919866	A	20040817
WO 2004-US27042	W	20040818
WO 2004-US27404	W	20040819
US 2004-922675	A2	20040820
US 2004-923475	A2	20040820
US 2004-923536	A2	20040820
WO 2004-US26930	W	20040820
WO 2004-US27333	W	20040820
WO 2004-US27367	W	20040820
WO 2004-US27403	W	20040820
WO 2004-US31012	W	20040915
US 2004-944611	A2	20040916

	WO 2004-US30488	W	20040916
	US 2005-31668	A1	20050106
	US 2005-39680	A2	20050118
	WO 2005-US4270	A2	20050209
	US 2005-98303	A2	20050404

AB The present invention concerns methods and reagents useful in modulating gene expression in a variety of applications, including use in therapeutic, diagnostic, target validation, and genomic discovery applications. Specifically, the invention relates to synthetic chemical modified small nucleic acid mols., such as short interfering nucleic acid (siNA), short interfering RNA (**siRNA**), double-stranded RNA (dsRNA), micro-RNA (miRNA), and short hairpin RNA (**shRNA**) mols. capable of mediating RNA interference (RNAi) against target nucleic acid sequences. Introduction of chemical modified nucleotides into nucleic acid mols. provides a powerful tool in overcoming potential limitations of in vivo stability and bioavailability inherent to native RNA mols. Unlike native unmodified **siRNA**, chemical modified siNA can also minimize the possibility of activating interferon activity in humans. Modifications are described including pyrimidine or purine nucleotides with 2'-deoxy-2'-fluoro or 2'-O-Me groups, phosphorothioate backbone modification, terminal residues comprising inverted deoxy thymidine or inverted deoxy abasic moieties, linking the sense and antisense strands with glyceryl succinate or dodecanoic acid or other linkers, and conjugation of targeting ligands (N-acetylgalactosamine, pteroic acid, peptides, or phospholipids) to the oligonucleotide termini. Thus, the serum stability of siNA constructs consisting of all RNA nucleotides containing two thymidine nucleotide overhangs have a half-life in human serum of 15 s, whereas chemical modified siNA constructs remained stable in serum for 1 to 3 days depending on the extent of modification. The small nucleic acid mols. are useful in the treatment of any disease or condition that responds to modulation of gene expression or activity in a cell, tissue, or organism. Three nuclease-resistant siNA mols. targeting site 1580 of hepatitis B virus RNA are designed using Stab 7/8 chemical and a 5'-terminal conjugate moiety (a branched cholesterol conjugate, a branched phospholipid conjugate, and a polyethylene glycol conjugate) showed significant stability in human and mouse serum (t1/2 = 10-408 h) and human liver extract (t1/2 = 28-43 h); the most stable siNA with all purine positions in the antisense strand with 2'-O-Me nucleotides had a half-life of 816 h in human liver extract

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TI RNA interference-mediated inhibition of gene expression using chemically modified short interfering nucleic acids
IN Mcswiggen, James; Chowrira, Bharat; Beigelman, Leonid; Macejak, Dennis; Zinnen, Shawn; Pavco, Pamela; Haeberli, Peter; Morrissey, David; Fosnaugh, Kathy; Jamison, Sharon; Usman, Nassim; Thompson, James; Vargeese, Chandra; Wang, Weimin; Chen, Tongqian; Vaish, Narendra
PA USA
SO U.S. Pat. Appl. Publ., 407 pp., Cont.-in-part of U.S. Ser. No. 427,160.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 235

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004192626	A1	20040930	US 2003-444853	20030523
	AU 9851819	A1	19980611	AU 1998-51819	19980112 <--
	AU 729657	B2	20010208		
	AU 9939188	A1	19990916	AU 1999-39188	19990713 <--
	AU 769175	B2	20040115	AU 2000-56616	20000911
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WO 2003070918 A2 20030828 WO 2003-US5346 20030220 <--
WO 2003070918 A3 20040708
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WO 2003074654 A2 20030912 WO 2003-US5028 20030220 <--
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WO 2003106476 A1 20031224 WO 2003-US18911 20030616 <--
WO 2003106476 C1 20040610
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AU 2003245512 A1 20031231 AU 2003-245512 20030616 <--
US 2005106726 A1 20050519 US 2003-652791 20030829
US 2004209831 A1 20041021 US 2003-667271 20030916
US 2005080031 A1 20050414 US 2003-724270 20031126
US 2005233329 A1 20051020 US 2003-727780 20031203
US 2005096284 A1 20050505 US 2004-783128 20040220
US 2005014172 A1 20050120 US 2004-798090 20040311
US 2005048529 A1 20050303 US 2004-800487 20040315
WO 2004092383 A2 20041028 WO 2004-US11320 20040413
WO 2004092383 A3 20050210
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WO 2004111237	A1	20041223	WO 2004-US11848	20040416

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US 2005032733	A1	20050210	US 2004-826966	20040416
WO 2004097020	A2	20041111	WO 2004-US12517	20040423
WO 2004097020	A3	20060105		

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US 2005054598	A1	20050310	US 2004-830569	20040423
US 2005148530	A1	20050707	US 2004-831620	20040423
US 2005233996	A1	20051020	US 2004-832522	20040426
US 2005137153	A1	20050623	US 2004-840731	20040506
US 2005171039	A1	20050804	US 2004-844076	20040511
US 2005159376	A1	20050721	US 2004-844072	20040512
AU 2004266311	A1	20050303	AU 2004-266311	20040524
CA 2526831	AA	20050303	CA 2004-2526831	20040524
WO 2005019453	A2	20050303	WO 2004-US16390	20040524
WO 2005019453	A3	20050623		

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EP 1627061	A2	20060222	EP 2004-776102	20040524

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK

US 2005137155	A1	20050623	US 2004-861060	20040603
US 2005143333	A1	20050630	US 2004-863973	20040609
US 2005171040	A1	20050804	US 2004-864044	20040609
US 2005119211	A1	20050602	US 2004-869638	20040616
US 2005119212	A1	20050602	US 2004-871222	20040618
US 2005209179	A1	20050922	US 2004-877889	20040625
US 2005124566	A1	20050609	US 2004-879867	20040628
US 2005130181	A1	20050616	US 2004-881118	20040630
US 2006142225	A1	20060629	US 2004-881580	20040630
US 2005124567	A1	20050609	US 2004-883218	20040701
US 2005124568	A1	20050609	US 2004-888226	20040709
US 2005222064	A1	20051006	US 2004-888269	20040709

	US 2005124569	A1	20050609	US 2004-892922	20040716
	US 2005164224	A1	20050728	US 2004-893010	20040716
	US 2005070497	A1	20050331	US 2004-894475	20040719
	US 2005176663	A1	20050811	US 2004-897902	20040723
	US 2005196765	A1	20050908	US 2004-898660	20040723
	US 2005277608	A1	20051215	US 2004-898311	20040723
	US 2005182006	A1	20050818	US 2004-903128	20040730
	US 2005159378	A1	20050721	US 2004-915896	20040811
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	US 2005158735	A1	20050721	US 2004-916095	20040811
	US 2005153914	A1	20050714	US 2004-918969	20040816
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	US 2005153915	A1	20050714	US 2004-922544	20040819
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	WO 2003-US5346	A2	20030220		
	US 2003-417012	A1	20030416		
	US 2003-422704	A2	20030424		
	US 2003-427160	A2	20030430		
	AU 1995-26422	A3	19950518		
	US 1996-623891	A	19960325		

AU 1996-76662	A3	19961025
US 2000-181797P	P	20000211
US 2001-780533	B2	20010209
WO 2001-US4273	A2	20010209
US 2001-827395	B2	20010405
US 2001-292217P	P	20010518
US 2001-294140P	P	20010529
US 2001-296249P	P	20010606
US 2001-306883P	P	20010720
US 2001-916466	B1	20010725
US 2001-311865P	P	20010813
US 2001-930423	B2	20010815
US 2001-318471P	P	20010910
US 2001-334461P	P	20011130
US 2002-358580P	P	20020220
US 2002-362016P	P	20020306
US 2002-363124P	P	20020311
WO 2002-US9187	A2	20020326
WO 2002-US10512	A2	20020403
US 2002-374722P	P	20020422
US 2002-151116	A2	20020517
US 2002-157580	A2	20020529
WO 2002-US16840	A2	20020529
WO 2002-US17674	A2	20020529
US 2002-163552	A2	20020606
US 2002-386782P	P	20020606
US 2002-389198P	P	20020617
US 2002-393796P	P	20020703
US 2002-393924P	P	20020703
US 2002-396600P	P	20020717
US 2002-396905P	P	20020718
US 2002-201394	A2	20020722
US 2002-398036P	P	20020723
US 2002-205309	A2	20020725
US 2002-206705	A2	20020726
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US 2002-401093P	P	20020805
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US 2002-404039P	P	20020815
US 2002-225023	A2	20020821
US 2002-406784P	P	20020829
US 2002-408378P	P	20020905
US 2002-409293P	P	20020909
US 2002-409493P	P	20020909
US 2002-238700	A2	20020910
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US 2002-251117	A2	20020919
US 2002-412304P	P	20020920
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US 2002-277494	B2	20021021
US 2002-287949	A2	20021104
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US 2002-306747	A2	20021127
US 2002-429359P	P	20021128
US 2002-431105P	P	20021205
US 2003-439922P	P	20030114
US 2003-440129P	P	20030115
WO 2003-US2510	A2	20030128
WO 2003-US3473	A2	20030205
WO 2003-US3662	A2	20030206

WO 2003-US4034	A2	20030211
WO 2003-US4088	A2	20030211
WO 2003-US4123	A2	20030211
WO 2003-US4347	A2	20030211
WO 2003-US4566	A2	20030211
WO 2003-US7273	A2	20030211
WO 2003-US4250	A2	20030213
WO 2003-US4317	A2	20030213
WO 2003-US4397	A2	20030213
WO 2003-US4402	A2	20030213
WO 2003-US4448	A2	20030213
WO 2003-US4710	A2	20030218
WO 2003-US4738	A2	20030218
WO 2003-US4907	A2	20030218
WO 2003-US4908	A2	20030218
WO 2003-US4909	A2	20030218
WO 2003-US4741	A2	20030220
WO 2003-US4951	A2	20030220
WO 2003-US5022	A2	20030220
WO 2003-US5043	A2	20030220
WO 2003-US5044	A2	20030220
WO 2003-US5045	A2	20030220
WO 2003-US5162	A2	20030220
WO 2003-US5190	A	20030220
WO 2003-US5234	A2	20030220
WO 2003-US5326	A2	20030220
US 2003-462874P	P	20030415
US 2003-420194	A2	20030422
WO 2003-US12626	A2	20030422
US 2003-424339	A	20030425
US 2003-430882	A2	20030506
US 2003-444853	A	20030523
WO 2003-US18911	W	20030616
US 2003-607933	A2	20030627
US 2003-485667P	P	20030709
US 2003-486729P	P	20030711
US 2003-652791	A2	20030829
US 2003-664767	B2	20030916
US 2003-665255	A2	20030916
US 2003-667271	A2	20030916
US 2003-664668	A2	20030918
US 2003-665951	A2	20030918
US 2003-670011	A2	20030923
US 2003-683990	A2	20031010
US 2003-512701P	P	20031020
US 2003-693059	A2	20031023
US 2003-698311	A2	20031031
US 2003-712633	A2	20031113
US 2003-720448	A2	20031124
US 2003-724270	A2	20031126
US 2003-726236	A2	20031202
US 2003-727780	A2	20031203
US 2003-738128	A2	20031218
US 2004-758155	A2	20040112
US 2004-757803	A2	20040114
US 2004-764957	A2	20040126
US 2004-543480P	P	20040210
US 2004-780447	A	20040213
US 2004-783128	A2	20040220
US 2004-798090	A2	20040311
US 2004-800487	A2	20040315
US 2004-824036	A2	20040414
US 2004-825485	A2	20040415
US 2004-826966	A2	20040416

WO 2004-US11848	A2	20040416
US 2004-830569	A2	20040423
US 2004-831620	A2	20040423
WO 2004-US12517	A2	20040423
US 2004-832522	A2	20040426
WO 2004-US13456	A2	20040430
US 2004-570086P	P	20040511
US 2004-844076	A2	20040511
US 2004-844072	A2	20040512
WO 2004-US16390	W	20040524
US 2004-863973	A2	20040609
US 2004-864044	A2	20040609
US 2004-894475	A2	20040719
US 2004-922675	A2	20040820
US 2004-923475	A2	20040820
US 2004-923536	A2	20040820
US 2004-944611	A2	20040916
US 2005-31668	A1	20050106
US 2005-39680	A2	20050118
WO 2005-US4270	A2	20050209
US 2005-98303	A2	20050404

AB The present invention concerns methods and reagents useful in modulating gene expression in a variety of applications, including use in therapeutic, diagnostic, target validation, and genomic discovery applications. Specifically, the invention relates to synthetic chemical modified small nucleic acid mols., such as short interfering nucleic acid (siNA), short interfering RNA (**siRNA**), double-stranded RNA (dsRNA), micro-RNA (miRNA), and short hairpin RNA (**shRNA**) mols. capable of mediating RNA interference (RNAi) against target nucleic acid sequences. Introduction of chemical modified nucleotides into nucleic acid mols. provides a powerful tool in overcoming potential limitations of in vivo stability and bioavailability inherent to native RNA mols. Unlike native unmodified **siRNA**, chemical modified siNA can also minimize the possibility of activating interferon activity in humans. Modifications are described including pyrimidine or purine nucleotides with 2'-deoxy-2'-fluoro or 2'-O-Me groups, phosphorothioate backbone modification, terminal residues comprising inverted deoxy thymidine or inverted deoxy abasic moieties, linking the sense and antisense strands with glyceryl succinate or dodecanoic acid or other linkers, and conjugation of targeting ligands (N-acetylgalactosamine, pteroic acid, peptides, or phospholipids) to the oligonucleotide termini. Thus, the serum stability of siNA constructs consisting of all RNA nucleotides containing two thymidine nucleotide overhangs have a half-life in human serum of 15 s, whereas chemical modified siNA constructs remained stable in serum for 1 to 3 days depending on the extent of modification. The small nucleic acid mols. are useful in the treatment of any disease or condition that responds to modulation of gene expression or activity in a cell, tissue, or organism. Three nuclease-resistant siNA mols. targeting site 1580 of hepatitis B virus RNA are designed using Stab 7/8 chemical and a 5'-terminal conjugate moiety (a branched cholesterol conjugate, a branched phospholipid conjugate, and a polyethylene glycol conjugate) showed significant stability in human and mouse serum (t1/2 = 10-408 h) and human liver extract (t1/2 = 28-43 h); the most stable siNA with all purine positions in the antisense strand with 2'-O-Me nucleotides had a half-life of 816 h in human liver extract

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AN 139:207762 CA
TI RNA interference mediated inhibition of gene expression using chemically modified short interfering nucleic acid
IN McSwiggen, James; Beigelman, Leonid; Macejak, Dennis; Zinnen, Shawn; Pavco, Pamela; Morrissey, David; Fosnaugh, Kathy; Mokler, Victor; Jamison, Sharon
PA Ribozyme Pharmaceuticals, Incorporated, USA

SO PCT Int. Appl., 204 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 235

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
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	AU 729657	B2	20010208			
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	AU 769175	B2	20040115	AU 2000-56616	20000911	
	CA 2459532	AA	20030828	CA 2003-2459532	20030220	<--
	AU 2003221258	A1	20030909	AU 2003-221258	20030220	<--
	GB 2397818	A1	20040804	GB 2004-6022	20030220	
	GB 2397818	B2	20050309			
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	JP 2005517438	T2	20050616	JP 2003-569811	20030220	
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	US 2004110296	A1	20040610	US 2003-427160	20030430	
	US 2004192626	A1	20040930	US 2003-444853	20030523	
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	AU 2003245512	A1	20031231	AU 2003-245512	20030616	<--
	US 2005106726	A1	20050519	US 2003-652791	20030829	
	US 2005080031	A1	20050414	US 2003-724270	20031126	
	US 2005233329	A1	20051020	US 2003-727780	20031203	
	US 2004249178	A1	20041209	US 2004-780447	20040213	
	US 2005096284	A1	20050505	US 2004-783128	20040220	
	US 2005014172	A1	20050120	US 2004-798090	20040311	
	US 2005048529	A1	20050303	US 2004-800487	20040315	
	US 2005191638	A1	20050901	US 2004-824036	20040414	
	US 2005032733	A1	20050210	US 2004-826966	20040416	
	US 2005054598	A1	20050310	US 2004-830569	20040423	
	US 2005148530	A1	20050707	US 2004-831620	20040423	
	US 2005233996	A1	20051020	US 2004-832522	20040426	
	US 2005137153	A1	20050623	US 2004-840731	20040506	
	US 2005171039	A1	20050804	US 2004-844076	20040511	
	US 2005159376	A1	20050721	US 2004-844072	20040512	
	US 2005137155	A1	20050623	US 2004-861060	20040603	
	US 2005143333	A1	20050630	US 2004-863973	20040609	

US 2005171040	A1	20050804	US 2004-864044	20040609
US 2005119211	A1	20050602	US 2004-869638	20040616
US 2005119212	A1	20050602	US 2004-871222	20040618
US 2005209179	A1	20050922	US 2004-877889	20040625
US 2005124566	A1	20050609	US 2004-879867	20040628
US 2005130181	A1	20050616	US 2004-881118	20040630
US 2006142225	A1	20060629	US 2004-881580	20040630
US 2005124567	A1	20050609	US 2004-883218	20040701
US 2005124568	A1	20050609	US 2004-888226	20040709
US 2005222064	A1	20051006	US 2004-888269	20040709
US 2005124569	A1	20050609	US 2004-892922	20040716
US 2005164224	A1	20050728	US 2004-893010	20040716
US 2005070497	A1	20050331	US 2004-894475	20040719
US 2005176663	A1	20050811	US 2004-897902	20040723
US 2005196765	A1	20050908	US 2004-898660	20040723
US 2005277608	A1	20051215	US 2004-898311	20040723
US 2005182006	A1	20050818	US 2004-903128	20040730
US 2005159378	A1	20050721	US 2004-915896	20040811
US 2005159379	A1	20050721	US 2004-916030	20040811
US 2005158735	A1	20050721	US 2004-916095	20040811
US 2005153914	A1	20050714	US 2004-918969	20040816
US 2005164966	A1	20050728	US 2004-918896	20040816
US 2005203040	A1	20050915	US 2004-918987	20040816
US 2005176664	A1	20050811	US 2004-919866	20040817
US 2005176665	A1	20050811	US 2004-919964	20040817
US 2005233997	A1	20051020	US 2004-919584	20040817
US 2005136436	A1	20050623	US 2004-923640	20040819
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US 2005159380	A1	20050721	US 2004-922626	20040819
US 2005159382	A1	20050721	US 2004-923580	20040819
US 2005164967	A1	20050728	US 2004-922034	20040819
US 2006142226	A1	20060629	US 2004-921554	20040819
US 2005079610	A1	20050414	US 2004-923115	20040820
US 2005153916	A1	20050714	US 2004-923330	20040820
US 2005159381	A1	20050721	US 2004-923522	20040820
US 2005164968	A1	20050728	US 2004-923329	20040820
US 2005170371	A1	20050804	US 2004-922340	20040820
US 2005176666	A1	20050811	US 2004-923182	20040820
US 2005176024	A1	20050811	US 2004-923354	20040820
US 2005176025	A1	20050811	US 2004-923516	20040820
US 2005182007	A1	20050818	US 2004-922675	20040820
US 2005182008	A1	20050818	US 2004-923142	20040820
US 2005182009	A1	20050818	US 2004-923201	20040820
US 2005187174	A1	20050825	US 2004-923181	20040820
US 2005191618	A1	20050901	US 2004-923473	20040820
US 2005196767	A1	20050908	US 2004-923380	20040820
US 2005227935	A1	20051013	US 2004-923470	20040820
US 2005227936	A1	20051013	US 2004-923475	20040820
US 2005233344	A1	20051020	US 2004-923270	20040820
US 2005239731	A1	20051027	US 2004-923379	20040820
US 2005256068	A1	20051117	US 2004-923451	20040820
US 2005267058	A1	20051201	US 2004-922761	20040820
US 2005288242	A1	20051229	US 2004-923476	20040820
US 2005209180	A1	20050922	US 2004-942560	20040915
US 2005233998	A1	20051020	US 2004-944611	20040916
US 2005222066	A1	20051006	US 2004-962898	20041012
US 2005266422	A1	20051201	US 2004-981966	20041105
US 2005261219	A1	20051124	US 2004-1347	20041201
US 2005209182	A1	20050922	US 2004-11913	20041214
US 2005196781	A1	20050908	US 2004-14373	20041215
US 2006019913	A1	20060126	US 2005-31668	20050106
US 2006025361	A1	20060202	US 2005-35813	20050114
US 2005287128	A1	20051229	US 2005-54047	20050209
US 2005260620	A1	20051124	US 2005-58582	20050215

	US 2005277133	A1	20051215	US 2005-63415	20050222
	US 2005282188	A1	20051222	US 2005-98303	20050404
	US 2006019917	A1	20060126	US 2005-140328	20050527
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	US 2002-386782P	P	20020606		
	US 2002-406784P	P	20020829		
	US 2002-408378P	P	20020905		
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	US 1996-623891	A	19960325		
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	US 2000-181797P	P	20000211		
	US 2001-780533	B2	20010209		
	WO 2001-US4273	A2	20010209		
	US 2001-827395	B2	20010405		
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	US 2001-916466	B1	20010725		
	US 2001-311865P	P	20010813		
	US 2001-930423	B2	20010815		
	US 2001-318471P	P	20010910		
	US 2001-334461P	P	20011130		
	US 2002-362016P	P	20020306		
	WO 2002-US9187	A2	20020326		
	WO 2002-US10512	A2	20020403		
	US 2002-374722P	P	20020422		
	US 2002-151116	A2	20020517		
	WO 2002-US15876	A2	20020520		
	US 2002-157580	A2	20020529		
	WO 2002-US16840	A2	20020529		
	WO 2002-US17674	A2	20020529		
	US 2002-163552	A2	20020606		
	US 2002-389198P	P	20020617		
	US 2002-393796P	P	20020703		
	US 2002-393924P	P	20020703		
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	US 2002-201394	A2	20020722		
	US 2002-398036P	P	20020723		
	US 2002-205309	A2	20020725		
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	US 2002-399348P	P	20020729		
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	US 2002-404039P	P	20020815		
	US 2002-225023	A2	20020821		
	US 2002-409293P	P	20020909		
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	US 2002-409785P	P	20020911		
	US 2002-411275P	P	20020917		
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	US 2002-277494	B2	20021021		
	US 2002-287949	A2	20021104		
	US 2002-425559P	P	20021112		
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	US 2002-306747	A2	20021127		
	US 2002-429359P	P	20021128		

US 2002-431105P	P	20021205
US 2003-439922P	P	20030114
US 2003-440129P	P	20030115
WO 2003-US2510	A2	20030128
WO 2003-US3473	A2	20030205
WO 2003-US3662	A2	20030206
WO 2003-US4034	A2	20030211
WO 2003-US4088	A2	20030211
WO 2003-US4123	A2	20030211
WO 2003-US4347	A2	20030211
WO 2003-US4566	A2	20030211
WO 2003-US7273	A2	20030211
WO 2003-US4250	A2	20030213
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WO 2003-US4397	A2	20030213
WO 2003-US4402	A2	20030213
WO 2003-US4448	A2	20030213
WO 2003-US4710	A2	20030218
WO 2003-US4738	A2	20030218
WO 2003-US4907	A2	20030218
WO 2003-US4908	A2	20030218
WO 2003-US4909	A2	20030218
WO 2003-US4741	A2	20030220
WO 2003-US4951	A2	20030220
WO 2003-US5022	A2	20030220
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WO 2003-US5043	A2	20030220
WO 2003-US5044	A2	20030220
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WO 2003-US5162	A2	20030220
WO 2003-US5190	A	20030220
WO 2003-US5234	A2	20030220
WO 2003-US5326	A2	20030220
WO 2003-US5346	W	20030220
US 2003-417012	A1	20030416
US 2003-420194	A2	20030422
WO 2003-US12626	A2	20030422
US 2003-422704	A2	20030424
US 2003-424339	A2	20030425
US 2003-427160	A2	20030430
US 2003-430882	A2	20030506
US 2003-444853	A	20030523
WO 2003-US18911	W	20030616
US 2003-607933	A2	20030627
US 2003-485667P	P	20030709
US 2003-486729P	P	20030711
US 2003-652791	A2	20030829
US 2003-664767	B2	20030916
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US 2003-667271	A2	20030916
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US 2003-665951	A2	20030918
US 2003-670011	A2	20030923
US 2003-683990	A2	20031010
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US 2003-693059	A2	20031023
US 2003-698311	A2	20031031
US 2003-712633	A2	20031113
US 2003-720448	A2	20031124
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US 2003-726236	A2	20031202
US 2003-727780	A2	20031203
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US 2004-757803	A2	20040114
US 2004-764957	A2	20040126
US 2004-543480P	P	20040210
US 2004-780447	A2	20040213
US 2004-783128	A2	20040220
US 2004-798090	A2	20040311
US 2004-800487	A2	20040315
US 2004-824036	A2	20040414
US 2004-825485	A2	20040415
US 2004-826966	A2	20040416
WO 2004-US11848	A2	20040416
US 2004-830569	A2	20040423
US 2004-831620	A2	20040423
WO 2004-US12517	A2	20040423
US 2004-832522	A2	20040426
WO 2004-US13456	A2	20040430
US 2004-570086P	P	20040511
US 2004-844076	A2	20040511
US 2004-844072	A2	20040512
WO 2004-US16390	A2	20040524
US 2004-863973	A2	20040609
US 2004-864044	A2	20040609
US 2004-894475	A2	20040719
US 2004-922675	A2	20040820
US 2004-923475	A2	20040820
US 2004-923536	A2	20040820
US 2004-944611	A2	20040916
US 2005-31668	A1	20050106
US 2005-39680	A2	20050118
WO 2005-US4270	A2	20050209
US 2005-98303	A2	20050404

AB The present invention concerns methods and reagents useful in modulating gene expression in a variety of applications, including use in therapeutic, diagnostic, target validation, and genomic discovery applications. Specifically, the invention relates to small nucleic acid mols., such as short interfering nucleic acid (siNA), short interfering RNA (**siRNA**), double-stranded RNA (dsRNA), micro-RNA (miRNA), and short hairpin RNA (**shRNA**) mols. capable of mediating RNA interference (RNAi) against target nucleic acid sequences. Exemplary siNA mols. are synthesized in tandem using standard phosphoramidite synthesis chemical and a cleavable linker, for example a succinyl-based linker, followed by a one-step purification process that provides RNAi mols. in high yield. Chemical modifications (2'-O-Me and 2'-deoxy-2'-fluoro groups, phosphorothioate linkages, 5'-terminal caps comprising an inverted deoxy abasic moiety, etc.) in siNA constructs are selected to yield nuclease resistance while preserving the ability to mediate RNAi activity. The siNA mols. are designed that can bind to target vascular endothelial growth factor receptor R1 mRNA, hepatitis B virus RNA, and hepatitis C virus RNA, and are optionally individually analyzed by a computer folding algorithm to assess whether the siNA mol. can interact with the target sequence. The siNA mols. are useful in the treatment and diagnosis of prostate cancer and any other condition that responds to modulation of gene expression or activity in a cell, tissue, or organism.

L19 ANSWER 5 OF 13 CA COPYRIGHT 2006 ACS on STN
AN 138:249768 CA
TI Retroviral expression vectors for efficient transcription of small interfering RNAs in target cells
IN Baltimore, David; Qin, Xiao-Feng; Lois-Caballe, Carlos
PA California Institute of Technology, USA
SO PCT Int. Appl., 56 pp.
CODEN: PIXXD2
DT Patent

LA English
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003023015	A2	20030320	WO 2002-US29214	20020913 <--
	WO 2003023015	A3	20030710		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	EP 1425400	A2	20040609	EP 2002-773370	20020912
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
	US 2003068821	A1	20030410	US 2002-243816	20020913 <--
	EP 1424895	A2	20040609	EP 2002-761659	20020913
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
	JP 2005502355	T2	20050127	JP 2003-527080	20020913
PRAI	US 2001-322031P	P	20010913		
	US 2002-347782P	P	20020109		
	US 2002-389592P	P	20020618		
	US 2002-406436P	P	20020827		
	WO 2002-US29130	W	20020912		
	WO 2002-US29214	W	20020913		

AB Retroviral expression vectors are described for use in the expression of genes for small interfering RNAs in a target cell. Small interfering RNAs (**siRNAs**) that interfere with a viral life cycle by down regulating either the viral genome, a viral genome transcript, or an essential gene of a host cell may be transcribed from these vectors using a promoter for RNA polymerase III. In particular, these constructs can be used in the treatment of infection, particularly infection with HIV.

L19 ANSWER 6 OF 13 CA COPYRIGHT 2006 ACS on STN
AN 138:142441 CA
TI Enzymatic nucleic acid peptide conjugates
IN Beigelman, Leonid; Azhayev, Alex; Azhayeva, Elena
PA Ribozyme Pharmaceuticals, Inc., USA; Antopolsky, Maxim
SO PCT Int. Appl., 88 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003008628	A2	20030130	WO 2002-US23324	20020722 <--
	WO 2003008628	A3	20031030		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 2003148928	A1	20030807	US 2002-201389	20020722 <--
PRAI	US 2001-306995P	P	20010720		

OS MARPAT 138:142441
AB This invention features conjugates, compns., methods of synthesis, and applications thereof, including galactose, galactosamine, N-acetyl galactosamine, PEG, phospholipid, and human serum albumin (HSA) derived conjugates of nucleosides, nucleotides, non-nucleosides, and nucleic acids including enzymic nucleic acids, DNAzymes, allozymes, antisense, dsRNA, **siRNA**, triplex oligonucleotides, 2,5-A chimeras, decoys and aptamers.

L19 ANSWER 7 OF 13 CA COPYRIGHT 2006 ACS on STN
AN 138:131091 CA
TI Selective post-transcriptional silencing of oncogene in mammalian cells by **siRNA** for therapy
IN Milner, Anne Josephine
PA UK
SO PCT Int. Appl., 44 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003008573	A2	20030130	WO 2002-GB3300	20020717 <--
	WO 2003008573	A3	20030717		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	CA 2452653	AA	20030130	CA 2002-2452653	20020717 <--
	EP 1432799	A2	20040630	EP 2002-747580	20020717
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
	JP 2004535813	T2	20041202	JP 2003-514890	20020717
	US 2004235171	A1	20041125	US 2004-484101	20040622
PRAI	GB 2001-17358	A	20010717		
	GB 2002-688	A	20020114		
	GB 2002-13855	A	20020617		
	WO 2002-GB3300	W	20020717		

AB The present invention relates to a method of selective post-transcriptional silencing in a mammalian cell of the expression of an exogenous gene of viral origin. The method comprises introducing an **siRNA** construct into a mammalian cell where the **siRNA** construct is homologous to a part of the mRNA sequence of the exogenous gene. The invention also comprises an **siRNA** construct with a nucleotide sequence which is homologous to a part of the mRNA sequence of an exogenous gene of viral origin and to the use of such a construct as a medicament. **SiRNA** causes selective loss of HPV E6 and E7 mRNA. E6 **siRNA** induces activation of P53 accompanied by p21 expression. E7 silencing results in de-phosphorylation of pRb and induces apoptosis of HPV-positives cells.

L19 ANSWER 8 OF 13 MEDLINE on STN
AN 2003106165 MEDLINE
DN PubMed ID: 12594334
TI RNA interference of **influenza** virus production by directly targeting mRNA for degradation and indirectly inhibiting all viral RNA transcription.
AU **Ge Qing**; McManus Michael T; Nguyen Tam; Shen Ching-Hung; Sharp

Phillip A; **Eisen Herman N**; **Chen Jianzhu**

CS Center for Cancer Research and Department of Biology, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, MA 02139, USA.

NC AI32486 (NIAID)
AI40146 (NIAID)
AI44477 (NIAID)
AI44478 (NIAID)
AI50631 (NIAID)
CA42063 (NCI)
CA60686 (NCI)
GM34277 (NIGMS)

SO Proceedings of the National Academy of Sciences of the United States of America, **(2003 Mar 4)** Vol. 100, No. 5, pp. 2718-23. Electronic Publication: 2003-02-19.
Journal code: 7505876. ISSN: 0027-8424.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200305

ED Entered STN: 6 Mar 2003
Last Updated on STN: 14 May 2003
Entered Medline: 13 May 2003

AB **Influenza** A virus causes widespread infection in the human respiratory tract, but existing vaccines and drug therapy are of limited value. Here we show that short interfering RNAs (**siRNAs**) specific for conserved regions of the viral genome can potently inhibit **influenza** virus production in both cell lines and embryonated chicken eggs. The inhibition depends on the presence of a functional antisense strand in the **siRNA** duplex, suggesting that viral mRNA is the target of RNA interference. However, **siRNA** specific for nucleocapsid (NP) or a component of the RNA transcriptase (PA) abolished the accumulation of not only the corresponding mRNA but also virion RNA and its complementary RNA. These **siRNAs** also broadly inhibited the accumulation of other viral, but not cellular, RNAs. The findings reveal that newly synthesized NP and PA proteins are required for **influenza** virus transcription and replication and provide a basis for the development of **siRNAs** as prophylaxis and therapy for **influenza** infection in humans.

L19 ANSWER 9 OF 13 SCISEARCH COPYRIGHT (c) 2006 The Thomson Corporation on STN

AN 2003:979106 SCISEARCH

GA The Genuine Article (R) Number: 739WG

TI Inhibition of virus replication by RNA interference

AU Haasnoot J; Cupac D; Berkhout B (Reprint)

CS Univ Amsterdam, Acad Med Ctr K3110, Dept Human Retrovirol, Meibergdreef 15, NL-1105 AZ Amsterdam, Netherlands (Reprint); Univ Amsterdam, Acad Med Ctr K3110, Dept Human Retrovirol, NL-1105 AZ Amsterdam, Netherlands

CYA Netherlands

SO JOURNAL OF BIOMEDICAL SCIENCE, (**2003**) Vol. 10, No. 6, Part 1, Sp. iss. SI, pp. 607-616.
ISSN: 1021-7770.

PB KARGER, ALLSCHWILERSTRASSE 10, CH-4009 BASEL, SWITZERLAND.

DT General Review; Journal

LA English

REC Reference Count: 72

ED Entered STN: 21 Nov 2003
Last Updated on STN: 21 Nov 2003

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB RNA interference (RNAi) is a sequence-specific gene-silencing mechanism in eukaryotes, which is believed to function as a defence against viruses and transposons. Since its discovery, RNAi has been

developed into a widely used technique for generating genetic knock-outs and for studying gene function by reverse genetics. Additionally, inhibition of virus replication by means of induced RNAi has now been reported for numerous viruses, including several important human pathogens such as human immunodeficiency virus type 1, hepatitis C virus, hepatitis B virus, dengue virus, poliovirus and **influenza** virus A. In this review, we will summarize the current data on RNAi-mediated inhibition of virus replication and discuss the possibilities for the development of RNAi-based antiviral therapeutics. Copyright (C) 2003 National Science Council, ROC and S. Karger AG, Basel.

L19 ANSWER 10 OF 13 MEDLINE on STN
AN 2003416308 MEDLINE
DN PubMed ID: 12954218
TI The utility of **siRNA** transcripts produced by RNA polymerase i in down regulating viral gene expression and replication of negative- and positive-strand RNA viruses.
AU McCown Matthew; Diamond Michael S; Pekosz Andrew
CS Department of Molecular Microbiology, Washington University School of Medicine, St. Louis, MO 63110-1093, USA.
SO Virology, **(2003 Sep 1)** Vol. 313, No. 2, pp. 514-24.
Journal code: 0110674. ISSN: 0042-6822.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200310
ED Entered STN: 5 Sep 2003
Last Updated on STN: 29 Oct 2003
Entered Medline: 28 Oct 2003
AB Short interfering double-stranded RNAs (**siRNAs**) expressed under the control of an RNA polymerase I promoter system were used to target gene expression of **influenza** A and West Nile virus. Decreased RNA and protein expression was induced in a sequence-specific manner-reducing sequence complementarity from 21 to 17 nucleotides abrogated the **siRNA** effect. Reduced M(2) expression resulted in a decrease in total and infectious **influenza** A virus production. WNV protein expression, genomic RNA, and infectious virus production were all dramatically reduced by **siRNAs** targeting two distinct viral sequences. The data demonstrate the utility of plasmid-driven **siRNAs** in regulating the expression of single viral genes, global viral gene expression, as a potential antiviral treatment, and as a genetic tool for viruses whose genomes are difficult to manipulate.

L19 ANSWER 11 OF 13 SCISEARCH COPYRIGHT (c) 2006 The Thomson Corporation on STN
AN 2003:1044955 SCISEARCH
GA The Genuine Article (R) Number: 739MR
TI Improvement of the health status of livestock populations by reproductive-biotechnological technologies
AU Niemann H (Reprint)
CS FB Biotechnol, Inst Tierzucht, FAL Mariensee, D-31535 Neustadt, Germany (Reprint); FB Biotechnol, Inst Tierzucht, D-31535 Neustadt, Germany
CYA Germany
SO ZUCHTUNGSKUNDE, (**SEP-OCT 2003**) Vol. 75, No. 5, pp. 401-413.
ISSN: 0044-5401.
PB EUGEN ULMER GMBH CO, POSTFACH 700561 WOLLGRASWEG 41, D-70599 STUTTGART, GERMANY.
DT Article; Journal
LA German
REC Reference Count: 42
ED Entered STN: 9 Dec 2003
Last Updated on STN: 9 Dec 2003
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Established reproductive-biotechnological technologies such as artificial insemination (AI) and embryo transfer (ET) employing in vivo produced embryos are already valuable tools for the maintenance and improvement of the health status of livestock populations. Transmission of pathogens can be avoided by employing strict hygienic protocols. The intact zona pellucida acts as a very efficient barrier against pathogenic infections in in vivo derived embryos. New hygienic challenges arise with the growing use of in vitro produced, cloned and/or transgenic embryos. But the extended experience gained from the global use of in vivo produced embryos forms a solid platform for eventual commercial applications of these types of embryos. However, as the zona pellucida is structurally different or not intact in these embryos major research is needed to ensure that no disease transmission occurs. Further options for the improvement of the health status of livestock populations will evolve from transgenic technologies, in particular when the genome of the major farm animals has been completely sequenced and mapped. Today there are already promising examples for the potential usefulness of this approach to generate disease resistant populations. In the future, gene therapy, DNA vaccination and small interfering RNAs (**siRNAs**) will also play an important role to maintain and improve the health of farm animals. It is predicted that within the next 15-20 years a broad arsenal of technologies based on reproductive biological and molecular genetic tools will become available for improving animal health.

L19 ANSWER 12 OF 13 MEDLINE on STN
AN 2003546501 MEDLINE
DN PubMed ID: 14625885
TI RNA interference: on the road to an alternate therapeutic strategy!.
AU Dave Rajnish S; Pomerantz Roger J
CS Center for Human Virology and Biodefense, Division of Infectious Diseases and Environmental Medicine, Thomas Jefferson University, Philadelphia, PA 19107, USA.
NC AI43876 (NIAID)
MH58526 (NIMH)
NS27405 (NINDS)
NS44513 (NINDS)
SO Reviews in medical virology, **(2003 Nov-Dec)** Vol. 13, No. 6, pp. 373-85. Ref: 96
Journal code: 9112448. ISSN: 1052-9276.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
LA English
FS Priority Journals
EM 200401
ED Entered STN: 20 Nov 2003
Last Updated on STN: 8 Jan 2004
Entered Medline: 7 Jan 2004
AB RNA interference (RNAi) is a newly described natural biological phenomenon mediated by small interfering RNA (**siRNA**) molecules which target viral mRNA for degradation by cellular enzymes. RNAi has become a method of choice for studying gene function, especially in mammalian systems. With proof-of-concept studies already presented against a wide variety of human pathogens and several innovative methods of delivering the **siRNA** to a wide variety of primary cells available, the role for **siRNA** as a potential therapeutic strategy is becoming increasingly clear. This review presents recent advances in this direction.

L19 ANSWER 13 OF 13 CA COPYRIGHT 2006 ACS on STN
AN 138:14152 CA
TI Preparation of enzymic ribonucleic acid peptide conjugates as antitumor and antiviral agents and compositions for cellular delivery
IN Beigelman, Leonid; Matulic-Adamic, Jasenka; Vargeese, Chandra; Karpeisky,

Alexander; Blatt, Lawrence; Shaffer, Christopher
PA Ribozyme Pharmaceuticals, Inc, USA
SO PCT Int. Appl., 220 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 235

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 2002094185	A2	20021128	WO 2002-US15876	20020520	<--
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW					
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG					
	AU 9851819	A1	19980611	AU 1998-51819	19980112	<--
	AU 729657	B2	20010208			
	AU 9939188	A1	19990916	AU 1999-39188	19990713	<--
	AU 769175	B2	20040115	AU 2000-56616	20000911	
	EP 1572067	A2	20050914	EP 2002-746413	20020517	
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR					
	CA 2447161	AA	20021128	CA 2002-2447161	20020520	<--
	JP 2005505504	T2	20050224	JP 2002-590906	20020520	
	US 2004110296	A1	20040610	US 2003-427160	20030430	
	US 2004192626	A1	20040930	US 2003-444853	20030523	
	US 2005080031	A1	20050414	US 2003-724270	20031126	
	US 2004249178	A1	20041209	US 2004-780447	20040213	
	US 2005096284	A1	20050505	US 2004-783128	20040220	
	US 2005014172	A1	20050120	US 2004-798090	20040311	
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	US 2005191638	A1	20050901	US 2004-824036	20040414	
	US 2005054598	A1	20050310	US 2004-830569	20040423	
	US 2005148530	A1	20050707	US 2004-831620	20040423	
	US 2005233996	A1	20051020	US 2004-832522	20040426	
	US 2005137153	A1	20050623	US 2004-840731	20040506	
	US 2005171039	A1	20050804	US 2004-844076	20040511	
	US 2005159376	A1	20050721	US 2004-844072	20040512	
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	US 2005143333	A1	20050630	US 2004-863973	20040609	
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	US 2005119212	A1	20050602	US 2004-871222	20040618	
	US 2005209179	A1	20050922	US 2004-877889	20040625	
	US 2005124566	A1	20050609	US 2004-879867	20040628	
	US 2005130181	A1	20050616	US 2004-881118	20040630	
	US 2006142225	A1	20060629	US 2004-881580	20040630	
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	US 2005159379	A1	20050721	US 2004-916030	20040811	
	US 2005158735	A1	20050721	US 2004-916095	20040811	
	US 2005153914	A1	20050714	US 2004-918969	20040816	

	US 2005164966	A1	20050728	US 2004-918896	20040816
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	US 2005233997	A1	20051020	US 2004-919584	20040817
	US 2005136436	A1	20050623	US 2004-923640	20040819
	US 2005153915	A1	20050714	US 2004-922544	20040819
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	US 2005164967	A1	20050728	US 2004-922034	20040819
	US 2006142226	A1	20060629	US 2004-921554	20040819
	US 2005079610	A1	20050414	US 2004-923115	20040820
	US 2005153916	A1	20050714	US 2004-923330	20040820
	US 2005159381	A1	20050721	US 2004-923522	20040820
	US 2005164968	A1	20050728	US 2004-923329	20040820
	US 2005170371	A1	20050804	US 2004-922340	20040820
	US 2005176666	A1	20050811	US 2004-923182	20040820
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	US 2005227936	A1	20051013	US 2004-923475	20040820
	US 2005233344	A1	20051020	US 2004-923270	20040820
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	AU 1995-26422	A3	19950518		
	US 1996-623891	A	19960325		
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	US 2000-181797P	P	20000211		
	US 2001-780533	B2	20010209		
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	US 2001-334461P	P	20011130		
	US 2002-358580P	P	20020220		
	US 2002-363124P	P	20020311		
	WO 2002-US9187	A2	20020326		

WO 2002-US10512	A2	20020403
US 2002-374722P	P	20020422
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WO 2002-US15876	W	20020520
US 2002-157580	A2	20020529
WO 2002-US16840	A2	20020529
WO 2002-US17674	A2	20020529
US 2002-163552	A2	20020606
US 2002-386782P	P	20020606
US 2002-393796P	P	20020703
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US 2002-418655P	P	20021015
US 2002-277494	B2	20021021
US 2002-287949	A2	20021104
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US 2002-306747	A2	20021127
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US 2002-431105P	P	20021205
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WO 2003-US7273	A2	20030211
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WO 2003-US4710	A2	20030218
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WO 2003-US4741	A2	20030220
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WO 2003-US5190	A	20030220
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WO 2003-US5326	A2	20030220
WO 2003-US5346	A2	20030220
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WO 2003-US12626	A2	20030422
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US 2003-698311	A2	20031031
US 2003-712633	A2	20031113
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US 2004-800487	A2	20040315
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WO 2004-US16390	A2	20040524
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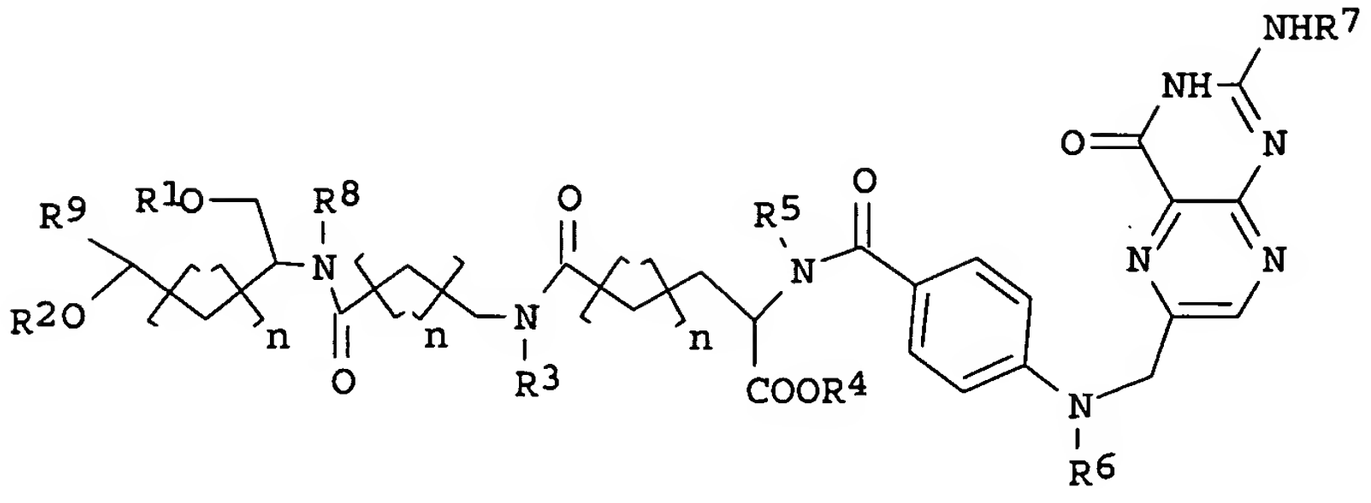

I

AB This invention features peptide nucleotide conjugates I wherein each R1-R8 are independently hydrogen, alkyl, substituted alkyl, aryl, substituted aryl, or a protecting group, each "n" is independently an integer from 0 to about 200, R9 is a straight or branched chain alkyl, substituted alkyl, aryl, or substituted aryl, and R2 is a phosphorus containing group, nucleoside, nucleotide, small mol., nucleic acid, or a solid support comprising a linker., degradable linkers, compns., methods of synthesis, and applications thereof, including folate, galactose, galactosamine, N-acetyl galactosamine, PEG, phospholipid, peptide and human serum albumin (HAS) derived conjugates of biol. active compds., including antibodies, antivirals, chemotherapeutics, peptides, proteins, hormones nucleosides, nucleotides, non-nucleosides, and nucleic acids including enzymic nucleic acids, DNAzymes, allozymes, antisense, dsRNA, **siRNA**, triplex oligonucleotides, 2,5-A chimeras, decoys and aptamers. Thus, 1-O-(4-monomethoxytrityl)-N-(12'-hydroxydodecanoyl-2-acetamido-3,4,6-tri-O-acetyl-2-deoxy-3-D-galactopyranose)-D-threoninol 3-O-(2-cyanoethyl,N,N-diisopropylphosphorami-dite) was prepared and incorporated into RNA. A method of treating a cancer patient, comprising contacting cells of patient wherein said cancer is breast cancer, lung cancer, colorectal cancer, brain cancer, esophageal cancer, stomach cancer, bladder cancer, pancreatic cancer, cervical cancer, head and neck cancer, ovarian cancer, melanoma, lymphoma, glioma, or multidrug resistant cancers and/or viral infections including HIV, HBV, HCV, CMV, RSV, HSV, poliovirus, **influenza**, rhinovirus, west nile virus, Ebola virus, foot and mouth virus, and papilloma.